WHAT IS CLAIMED IS:

1. A composition for application to a material comprising:

(a) at least one alkaline metal inorganic salt, wherein the alkaline metal inorganic salt is present in the composition in an amount ranging from about 5% to about 45% by weight;

(b) at least one potassium salt of an organic acid, wherein the potassium salt of an organic acid is present in the composition in an amount ranging from about 1% to about 72% by weight;

(c) optionally, at least one boron-containing compound, wherein the boron-containing compound is present in the composition in an amount ranging from about 0% to about 10% by weight;

(d) optionally, at least one surfactant, wherein the surfactant is present in the composition in an amount ranging from about 0% to about 5% by weight;

(e) optionally, at least one microbe-inhibiting compound, wherein the microbe-inhibiting compound is present in the composition in an amount ranging from about 0% to about 6% by weight;

(f) optionally, at least one detection component, wherein the detection component is present in the composition in an amount ranging from about 0% to about 10% by weight; and

(g) an aqueous liquid, wherein the aqueous liquid is present in the composition in an amount that brings the percent weight of the composition to 100%;

wherein the composition has a pH ranging from about 7.1 to about 14, and wherein the composition, when applied to the material, reduces the amount of burning that occurs to the material, or the amount or density of smoke produced by the material, when the material is subsequently exposed to fire, and when the composition is applied to a material prior to, during or after the material being exposed to conditions favorable to the growth of microbes, reduces, inhibits or prevents the growth of microbes on the material when the material is exposed to conditions favorable to the growth of microbes.

2. The composition of claim 1 wherein the boron-containing compound is present in an amount ranging from about 0.1% to about 10% by weight.

3. The composition of claim 2 wherein the surfactant is present in an amount ranging from about 0.1% to about 5% by weight.

4. The composition of claim 3 wherein the microbe-inhibiting compound is present in an amount ranging from about 0.1% to about 6% by weight.

5. The composition of claim 1 wherein the detection component is present in an amount ranging from about 0.01% to about 10% by weight such that it permits a determination of whether or not the composition has been applied to the material.

6. The composition of claim 4 wherein the detection component is present in an amount ranging from about 0.01% to about 10% by weight such that it permits a determination of whether or not the composition has been applied to the material.

7. The composition of claim 6 wherein the microbe-inhibiting compound functions as the detection component, and is present in the composition in an amount ranging from about 0.1% to about 6% by weight, or wherein the microbe-inhibiting compound is different from the detection component and the detection component is present in an amount ranging from about 0.01% to about 10% by weight.

8. The composition of claim 7 wherein the alkaline metal inorganic salt is present in an amount ranging from about 20% to about 42% by weight.

9. The composition of claim 8 wherein the potassium salt of an organic acid is present in an amount ranging from about 2% to about 60% by weight.

10. The composition of claim 9 wherein the potassium salt of an organic acid is present in an amount ranging from about 2% to about 40% by weight.

11. The composition of claim 10 wherein the potassium salt of an organic acid is present in an amount ranging from about 8% to about 15% by weight.

12. The composition of claim 11 wherein the boron-containing compound is present in an amount ranging from about 0.4% to about 8% by weight.

13. The composition of claim 12 wherein the surfactant is present in an amount ranging from about 0.3% to about 3% by weight.

14. The composition of claim 13 wherein the microbe-inhibiting compound is present in an amount ranging from about 0.1% to about 3% by weight.

15. The composition of claim 5 wherein the detection component is present in an amount ranging from about 0.01% to about 3% by weight.

16. The composition of claim 14 wherein the detection component is present in an amount ranging from about 0.01% to about 3% by weight.

17. The composition of claim 16 wherein the boron-containing compound is present in an amount ranging from about 1% to about 6% by weight.

18. The composition of claim 17 wherein the surfactant is present in an amount ranging from about 0.5% to about 0.7% by weight.

19. The composition of claim 15 wherein the detection component is present in an amount of about 0.7%.

20. The composition of claim 7 wherein the alkaline metal inorganic salt is potassium carbonate, potassium carbonate sesquihydrate, potassium gluconate, potassium citrate, potassium sorbate, potassium bromide, potassium chloride, potassium chromate, potassium fluoride, potassium iodide, potassium salicylate, potassium selinate, potassium silicate, potassium thioantimonate, potassium sulfide, potassium sulfate, potassium thiosulfate, potassium tartrate, potassium phosphate, sodium acetate, sodium carbonate, sodium formate, sodium sorbate, sodium sulfate, sodium tartrate, sodium nitrate, sodium phosphate, sodium gluconate, sodium citrate, sodium sorbate, lithium sulfate, lithium tartrate, lithium nitrate, lithium phosphate, rubidium acetate, rubidium carbonate, rubidium sulfate, cesium acetate, cesium sulfate or a combination of one or more of the foregoing.

21. The composition of claim 20 wherein the potassium salt of an organic acid is potassium acetate, potassium formate, potassium tartrate, potassium citrate, potassium sorbate, potassium lactate or potassium gluconate.

22. The composition of claim 21 wherein the boron-containing compound is ammonium borate, sodium borate, potassium borate, calcium borate, potassium tetraborate or potassium pentaborate.

23. The composition of claim 22 wherein the surfactant is isodecyloxypropyl dihydroxy methyl ammonium chloride, cetyl trimethyl ammonium bromide, telomer B monoether, alkyl imino acid, monosodium salt, B-alanine, N-(2-carboxyethyl)-N-3 decyloxy propyl monosodium salt, Neodol 25-7, Neodol 25-9, alkyloxypolyethoxeneoxyethanol, Tergitol 15-S-7, Nonylphenol, NP-9 Ethoxalted nonylphenol or Octyphenol.

24. The composition of claim 23 wherein the microbe-inhibiting compound is 2-pyridinethiol-1-oxide, sodium salt, 3-iodo-2-propynyl butyl carbamate, disodium cyanoditholmidocarbonate, potassium N-methyldithiocarbamate, ethanol, 2,2'-(cocoimino)-bis, salt with phosphoric acid, bis (2-ethylhexyl ester (1:1), ethanol, 2,2'-

(cocoimino)-bis, salt with phosphoric acid, mono (2-ethylhexyl) ester (1:1), phosphoric acid, mono (2-ethylhexyl) ester, bis(tri-N-butylin)oxide, ortho-phenyl phenol, potassium iodide, ammonium iodide, potassium iodate, ammonium iodate, 10-10 oxybisphenoxyarsine, octadecyl.nodim.ethyltrihydroxy silypropyl ammonium chloride, 3-(trimethoxysilyl) propyloctadecyldimethyl ammonium chloride or the Intersept® fungistat and bacteriostat.

25. The composition of claim 24 wherein the microbe-inhibiting compound is 2-pyridinethiol-1-oxide, sodium salt.

26. The composition of claim 5 wherein the detection component is 3-iodo-2-propynyl butyl carbamate, zirconia, selenium dioxide, zirconium acetate or a boron-containing compound.

27. The composition of claim 24 wherein the detection component is 3-iodo-2-propynyl butyl carbamate, zirconia, selenium dioxide, zirconium acetate or a boron-containing compound.

28. The composition of claim 27 wherein the alkaline metal inorganic salt is potassium carbonate.

29. The composition of claim 28 wherein the potassium salt of an organic acid is potassium acetate.

30. The composition of claim 29 wherein the boron-containing compound is potassium tetraborate or potassium pentaborate.

31. The composition of claim 30 wherein the surfactant is isodecyloxypropyl dihydroxy methyl ammonium chloride.

32. The composition of claim 26 wherein the detection component is 3-iodo-2-propynyl butyl carbamate or a boron-containing compound.

33. The composition of claim 31 wherein the detection component is 3-iodo-2-propynyl butyl carbamate or a boron-containing compound.

34. The composition of claim 33 wherein the microbe-inhibiting compound is 3-iodo-2-propynyl butyl carbamate, and the 3-iodo-2-propynyl butyl carbamate also functions as the detection component.

35. The composition of claim 34 wherein the pH of the composition is about 11 or higher.

36. The composition of claim 1 wherein the composition contains potassium carbonate in the amount of about 25% by weight, potassium acetate in the amount of about 13% by weight, and either potassium tetraborate or potassium pentaborate in the amount of about 2% by weight, with the remaining weight being water, and has a pH of about 11 or higher.

37. The composition of claim 36 wherein the composition additionally contains isodecyloxypropyl dihydroxy methyl ammonium chloride in an amount of about 0.5% by weight, and 2-pyridinethiol-1-oxide, sodium salt in an amount ranging from about 0.4% to about 0.9% by weight, with the remainder of the weight percent of the composition being water.

38. The composition of claim 37 wherein the composition contains 2-pyridinethiol-1-oxide, sodium salt in an amount of about 0.5% by weight.

39. The composition of claim 36 wherein the composition additionally contains isodecyloxypropyl dihydroxy methyl ammonium chloride in an amount of about 0.5% by weight, and 3-iodo-2-propynyl butyl carbamate in an amount of about 0.7% by weight, with the remainder of the weight percent of the composition being water.

40. A method for reducing the burning of, or the amount or density of smoke produced by, a material that is exposed to fire, and for inhibiting, reducing or preventing the growth of microbes on a material that is exposed to conditions favorable to the growth of microbes, comprising applying at least one application of a composition to the material prior to the material subsequently being exposed to fire, or prior to, during or after the material being exposed to conditions favorable to the growth of microbes, at a rate of about 1 gallon per from about 100 to about 1,000 square feet of the material, wherein the composition comprises:

(a) at least one alkaline metal inorganic salt, wherein the alkaline metal inorganic salt is present in the composition in an amount ranging from about 5% to about 45% by weight;

(b) at least one potassium salt of an organic acid, wherein the potassium salt of an organic acid is present in the composition in an amount ranging from about 1% to about 72% by weight;

(c) optionally, at least one boron-containing compound, wherein the boron-containing compound is present in the composition in an amount ranging from about 0% to about 10% by weight;

(d) optionally, at least one surfactant, wherein the surfactant is present in the composition in an amount ranging from about 0% to about 5% by weight;

(e) optionally, at least one microbe-inhibiting compound, wherein the microbe-inhibiting compound is present in the composition in an amount ranging from about 0% to about 6% by weight;

(f) optionally, at least one detection component, wherein the detection component is present in the composition in an amount ranging from about 0% to about 10% by weight; and

(g) an aqueous liquid, wherein the aqueous liquid is present in the composition in an amount that brings the percent weight of the composition to 100%;

wherein the composition has a pH ranging from about 7.1 to about 14.

41. The method of claim 40 wherein boron-containing compound is present in an amount ranging from about 0.1% to about 10% by weight.

42. The method of claim 41 wherein the surfactant is present in an amount ranging from about 0.1% to about 5% by weight.

43. The method of claim 42 wherein the microbe-inhibiting compound is present in an amount ranging from about 0.1% to about 6% by weight.

44. The method of claim 43 wherein the microbe-inhibiting compound functions as the detection component, and is present in the composition in an amount ranging from about 0.1% to about 6% by weight, or wherein the microbe-inhibiting compound is different from the detection component and the detection component is present in an amount ranging from about 0.01% to about 10% by weight.

45. The method of claim 44 wherein the alkaline metal inorganic salt is present in an amount ranging from about 20% to about 42% by weight, and is potassium carbonate, potassium carbonate sesquihydrate, potassium gluconate, potassium citrate, potassium sorbate, potassium bromide, potassium chloride, potassium chromate, potassium fluoride, potassium iodide, potassium salicylate, potassium selinate, potassium silicate, potassium thioantimonate, potassium sulfide, potassium sulfate, potassium thiosulfate, potassium tartrate, potassium phosphate, sodium acetate, sodium carbonate, sodium formate, sodium sorbate, sodium sulfate, sodium tartrate, sodium nitrate, sodium phosphate, sodium gluconate, sodium citrate, sodium sorbate, lithium sulfate, lithium tartrate, lithium nitrate, lithium phosphate, rubidium acetate, rubidium carbonate, rubidium sulfate, cesium acetate, cesium sulfate or a combination of one or more of the foregoing.

46. The method of claim 45 wherein the potassium salt of an organic acid is present in an amount ranging from about 2% to about 60% by weight, and is potassium acetate, potassium formate, potassium tartrate, potassium citrate, potassium gluconate, potassium sorbate or potassium lactate.

47. The method of claim 46 wherein the potassium salt of an organic acid is present in an amount ranging from about 2% to about 40% by weight.

48. The method of claim 47 wherein the potassium salt of an organic acid is present in an amount ranging from about 8% to about 15% by weight.

49. The method of claim 48 wherein the boron-containing compound is present in an amount ranging from about 0.4% to about 8% by weight, and is ammonium borate, sodium borate, potassium borate, calcium borate, potassium tetraborate or potassium pentaborate.

50. The method of claim 49 wherein the surfactant is present in an amount ranging from about 0.3% to about 3% by weight, and is isodecyloxypropyl dihydroxy methyl ammonium chloride, cetyl trimethyl ammonium bromide, telomer B monoether, alkyl imino acid, monosodium salt, B-alanine, N-(2-carboxyethyl)-N-3 decyloxy propyl monosodium salt, Neodol 25-7, Neodol 25-9, alkyloxypolyethoxeneoxyethanol, Tergitol 15-S-7, Nonylphenol, NP-9 Ethoxalted nonylphenol or Octyphenol.

51. The method of claim 50 wherein the microbe-inhibiting compound is present in an amount ranging from about 0.1% to about 3% by weight, and is 2-pyridinethiol-1-oxide, sodium salt, 3-iodo-2-propynyl butyl carbamate, disodium cyanoditholmidocarbonate, potassium N-methyldithiocarbamate, ethanol, 2,2'-(cocoimino)-bis, salt with phosphoric acid, bis (2-ethylhexyl ester (1:1), ethanol, 2,2'-(cocoimino)-bis, salt with phosphoric acid, mono (2-ethylhexyl) ester (1:1), phosphoric acid, mono (2-ethylhexyl) ester, bis(tri-N-butylin)oxide, ortho-phenyl phenol, potassium iodide, ammonium iodide, potassium iodate, ammonium iodate, 10-10

oxybisphenoxyarsine, octadecyl.nodim.ethyltrihydroxy silypropyl ammonium chloride, 3-(trimethoxysilyl) propyloctadecyldimethyl ammonium chloride or the Intersept® fungistat and bacteriostat.

52. The method of claim 51 wherein the microbe-inhibiting compound is 2-pyridinethiol-1-oxide, sodium salt.

53. The method of claim 51 wherein the detection component is present in an amount ranging from about 0.01% to about 3% by weight, and is 3-iodo-2-propynyl butyl carbamate, zirconia, selenium dioxide, zirconium acetate or a boron-containing compound.

54. The method of claim 53 wherein the alkaline metal inorganic salt is potassium carbonate, the potassium salt of an organic acid is potassium acetate, the boron-containing compound is either potassium tetraborate or potassium pentaborate, and is present in an amount ranging from about 1% to about 4% by weight, the surfactant is isodecyloxypropyl dihydroxy methyl ammonium chloride, and is present in an amount ranging from about 0.5% to about 0.7% by weight, the microbe-inhibiting compound is 3-iodo-2-propynyl butyl carbamate, and the 3-iodo-2-propynyl butyl carbamate also functions as the detection component, and the pH of the composition is about 11 or higher.

55. The method of claim 53 wherein the alkaline metal inorganic salt is potassium carbonate, the potassium salt of an organic acid is potassium acetate, the boron-containing compound is either potassium tetraborate or potassium pentaborate, and is present in an amount ranging from about 1% to about 4% by weight, and also functions as the detection component, the surfactant is isodecyloxypropyl dihydroxy methyl ammonium chloride, and is present in an amount ranging from about 0.5% to about 0.7% by weight, the microbe-inhibiting compound is 2-pyridinethiol-1-oxide, sodium salt, and the pH of the composition is about 11 or higher.

56. The method of claim 40 wherein the composition contains potassium carbonate in the amount of about 25% by weight, potassium acetate in the amount of about 13% by weight and either potassium tetraborate or potassium pentaborate in the amount of about 2% by weight, with the remaining weight being water, and has a pH of about 11 or higher.

57. The method of claim 56 wherein the composition additionally contains isodecyloxypropyl dihydroxy methyl ammonium chloride in an amount of about 0.5% by weight and 3-iodo-2-propynyl butyl carbamate in an amount of about 0.7% by weight, with the remainder of the weight percent of the composition being water.

58. The method of claim 56 wherein the composition additionally contains isodecyloxypropyl dihydroxy methyl ammonium chloride in an amount of about 0.5% by weight and 2-pyridinethiol-1-oxide, sodium salt in an amount ranging from about 0.4% to about 0.9% by weight, with the remainder of the weight percent of the composition being water.

59. The method of claim 58 wherein the composition contains 2-pyridinethiol-1-oxide, sodium salt in an amount of about 0.5% by weight.

60. The method of claim 53 wherein the composition is added to, or mixed with, the material during its manufacture or other production.

61. The method of claim 53 wherein the composition is applied to one or more surfaces of the material.

62. The method of claim 61 wherein the composition is applied to one or more surfaces of the material by spraying, wiping, painting, brushing, rolling, immersing or drenching.

63. The method of claim 61 wherein the material has not been painted, coated or treated after its production in any other manner.

64. The method of claim 61 wherein the composition is applied to both sides of the paper binding that is present on the front side of Gypsum Wall Board.

65. The method of claim 61 wherein the composition is applied to both sides of the paper binding that is present on the back side of Gypsum Wall Board.

66. The method of claim 61 wherein the composition is applied to the material after one or more coats of paint or other coatings have been applied to the material.

67. The method of claim 61 wherein the composition is applied to the material in between two or more layers of paint or other coatings that are applied to the material.

68. The method of claim 61 wherein the composition is applied to the material after a finish coat of paint or other coating has been applied to the material.

69. The method of claim 53 wherein the material is dry wall, paper, board paper binder, wood, ceiling tile, floor tile, floor covering, fiberboard, concrete, a textile, insulation, a joint compound, tape or a paper backing present on any of the foregoing.

70. The method of claim 69 wherein the material is Gypsum Wall Board.

71. The method of claim 70 wherein the Gypsum Wall Board is new construction, non-coated production run Gypsum Wall Board.

72. The method of claim 70 wherein the Gypsum Wall Board is being rehabilitated.

73. The method of claim 69 wherein the material is ceiling tile.

74. The method of claim 69 wherein the material is a floor, floor tile or other floor covering.

75. The method of claim 53 wherein the composition is applied to the material at the rate of from about 1 gallon per from about 300 to about 700 square feet of material.

76. The method of claim 53 wherein 2 treatments of the composition are applied to the material, with each treatment being at an application rate of about 1 gallon per from about 300 to about 700 square feet of material.

77. The method of claim 75 wherein 2 treatments of the composition are applied to the material, with each treatment being at an application rate of about 1 gallon per about 700 square feet of a material.

78. A method for reducing the burning of, or the amount or density of smoke produced by, a material that is exposed to fire, and for inhibiting, reducing or preventing the growth of microbes on a material that is exposed to conditions favorable to the growth of microbes, comprising applying at least one application of a composition to the material prior to the material subsequently being exposed to fire, or prior to, during or after the material being exposed to conditions favorable to the growth of microbes, at a rate of about 1 gallon per from about 100 to about 1,000 square feet of the material, wherein the composition comprises:

(a) potassium acetate, wherein the potassium acetate is present in the composition in an amount ranging from about 1% to about 72% by weight; and

(b) an aqueous liquid, wherein the aqueous liquid is present in the composition in an amount that brings the percent weight of the composition to 100%;

wherein the composition has a pH ranging from about 7.1 to about 14.

79. The method of claim 78 wherein the potassium acetate is present in an amount ranging from about 2% to about 60% by weight.

80. The method of claim 79 wherein the potassium acetate is present in an amount ranging from about 2% to about 40% by weight.

81. The method of claim 80 wherein the potassium acetate is present in an amount ranging from about 8% to about 15% by weight.

82. A composition for application to a material comprising:

(a) at least one alkaline metal inorganic salt, wherein the alkaline metal inorganic salt is present in the composition in an amount ranging from about 5% to about 45% by weight;

(b) at least one potassium salt of an organic acid, wherein the potassium salt of an organic acid is present in the composition in an amount ranging from about 5% to about 50% by weight;

(c) optionally, at least one boron-containing compound, wherein the boron-containing compound is present in the composition in an amount ranging from about 0% to about 10% by weight;

(d) optionally, at least one surfactant, wherein the surfactant is present in the composition in an amount ranging from about 0% to about 5% by weight;

(e) optionally, at least one microbe-inhibiting compound, wherein the microbe-inhibiting compound is present in the composition in an amount ranging from about 0% to about 6% by weight;

(f) optionally, at least one detection component, wherein the detection component is present in the composition in an amount ranging from about 0% to about 10% by weight; and

(g) an aqueous liquid, wherein the aqueous liquid is present in the composition in an amount that brings the percent weight of the composition to 100%;

wherein the composition has a pH ranging from about 7.1 to about 14, and wherein the composition, when applied to the material, reduces the amount of burning that occurs to the material, or the amount or density of smoke produced by the material, when the material is subsequently exposed to fire, and when the composition is applied to a material prior to, during or after the material being exposed to conditions favorable to the

growth of microbes, reduces or inhibits the growth of microbes on the material when the material is exposed to conditions favorable to the growth of microbes.